

PRASHANT CHAUHAN

Senior Research Developer · GIS & 3D Visualization Specialist · Full-Stack Engineer

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PROFESSIONAL SUMMARY

(<https://prashant16-portfolio.vercel.app/>)

Senior Research Developer with **5+ years** of experience architecting scalable GIS platforms, 3D geospatial visualization systems, and enterprise full-stack applications. Creator of **bhumi-sdk** — a published npm library for web-based 3D GIS operations. Delivered a **3× rendering performance boost** on the Bhumi platform and a **10× Android performance improvement** and **800% improvement on Heli-AI**. Hands-on collaborator with **DRDO (DGRE, Chandigarh)** and Accenture on defence-grade geospatial intelligence tools. Specialist in Three.js, WebGL, Vue.js, Angular, Node.js, PostGIS, and LiDAR point cloud processing. Multiple-time **Employee of the Month** award winner for delivering high-impact, innovative solutions across GIS, defence, and enterprise domains.

CORE COMPETENCIES

3D & Visualization	Three.js · WebGL · Canvas API · LOD · 3D Terrain Modeling · LiDAR Point Cloud · DEM · OBJ · glTF
GIS & Geospatial	PostGIS · Geoserver · OpenLayers · Leaflet.js · Mapbox · QGIS · GeoJSON · KML/KMZ · Shapefiles · TMS · WMS · WMTS · XYZ
Frontend & Mobile	Vue.js · Angular · React Native · TypeScript · JavaScript (ES6+) · HTML5 · CSS3
Backend & APIs	Node.js · Express.js · REST APIs · Microservices · WebSockets · JWT · SSL · pm2
Databases	PostgreSQL · PostGIS · MongoDB · Neo4j · MySQL
Cloud & DevOps	AWS (EC2, S3, Lambda) · Docker · DigitalOcean VPS · CI/CD Pipelines · Git
Analytics	Power BI · Chart.js · Data Visualization · Analytics Dashboards
Professional	R&D Leadership · Technical Mentorship · Agile/Scrum · Performance Optimisation · Cross-functional Collaboration

PROFESSIONAL EXPERIENCE

Senior Research Developer · Heliware (Simultaneous Geographical Reality Labs Pvt. Ltd.)

Gurgaon, NCR | Nov 2022 – Present | <https://helibhumi.ai/>

- ▶ Led end-to-end R&D and development of **Bhumi** — a production-grade GIS-based 3D geospatial platform for real-time terrain visualisation, spatial analytics, and defence-grade operations.
- ▶ Engineered advanced custom platform features:
 - Dome Analysis, Line of Sight (LOS), Aeroplane/Drone flythrough, Sun/Moon positioning & real-time sky visualisation
 - Complex geometry storage and high-speed spatial retrieval via PostGIS
 - Camera/fly control system for cinematic-quality navigation smoothness
 - Architectural refactor achieving **3× rendering performance improvement** via LOD, Canvas API tuning, and Three.js draw-call reduction**Tech:** Vue.js · Three.js · LOD · Canvas API · Node.js · MongoDB · Geoserver · PostgreSQL · Chart.js
- ▶ Developed the **Bhumi 3D Android App** with custom gesture-based zoom/pan/tilt/roll controls; achieved **10× performance improvement** through native rendering pipeline optimisation.
Tech: React Native · Three.js · Node.js · MongoDB · Geoserver · PostgreSQL
- ▶ Built the **Heli-AI Android App** processing millions of government land records and taxation datasets; delivered an **800% performance improvement** via async processing and WebSocket streaming.
Tech: React Native · Mapbox · Three.js · Node.js · Express.js · WebSockets · pm2
- ▶ Collaborated with **DRDO (DGRE, Chandigarh)** on classified defence geospatial intelligence tools, leading multi-team delivery under strict performance and security requirements.
Tech: Angular · Three.js · LOD · Node.js · Express.js · Geoserver · PostgreSQL · Chart.js · pm2

- ▶ Ingested and visualised **10+ spatial data formats**: GeoJSON, KML/KMZ, Shapefiles, LiDAR/LAS, OBJ, glTF, DEM, Raster/Vector data, TMS, WMS, WMTS, XYZ tile services.
- ▶ Recognised as **Employee of the Month** multiple times for delivering innovative, high-performance solutions ahead of schedule.

Software Engineer · Culturro Technologies

Gurgaon, NCR · Sept 2019 – Dec 2020 · culturro.com · risely.me

- ▶ Built core modules of the **Employee Experience Platform**: hierarchical org structures, nudge engine, eNPS & attrition trend dashboards, productivity analytics, and bulk CSV data exports.
- ▶ Developed and deployed a **Microsoft Teams Bot** for automated company onboarding, employee interaction, and proactive HR communications — reducing manual HR overhead significantly.
- ▶ Automated employee data pipelines and created **Power BI dashboards** delivering actionable real-time workplace insights for HR leadership decision-making.

Tech: [AngularJS](#) · [JavaScript](#) · [Node.js](#) · [Express.js](#) · [Chart.js](#)

Software Developer Intern · Inventrik Pte. Ltd.

New Delhi · Jan 2019 – May 2019

- ▶ Built a **Mapbox-powered** location mapping and spatial event-tracking web component, improving spatial data usability and front-end visualisation quality.

Tech: [AngularJS](#) · [JavaScript](#) · [Mapbox](#) · [jQuery](#)

KEY PROJECTS

My Portfolio - <https://prashant16-portfolio.vercel.app/>

Bhumi — GIS 3D Geospatial Platform — <https://helibhumi.ai/>

Production platform for real-time 3D terrain modelling, defence-grade spatial analytics, and geospatial operations. Supports GeoJSON, KML/KMZ, Shapefiles, LiDAR, DEM & 10+ formats. Achieved 3× rendering improvement.

Tech: [Vue.js](#) · [Three.js](#) · [Node.js](#) · [MongoDB](#) · [PostgreSQL/PostGIS](#) · [Geoserver](#) · [Chart.js](#)

bhumi-sdk — Published npm Library — <https://www.npmjs.com/package/bhumi-sdk>

A library enabling 3D GIS operations on the web: points, lines, polygons, GeoJSON overlays, LOS analysis, and Dome Analysis.

Tech: [TypeScript](#) · [Three.js](#) · [Canvas API](#)

Smart-Drive-AI — <https://smart-drive-ai.netlify.app/>

GIS-based driving analytics platform tracking habits, routes, and performance metrics. Real-time alerts for overspeeding, potholes, and speed breakers.

Tech: [Vue.js](#) · [Mapbox](#)

WarWatch — Global Conflict Intelligence Portal — <http://68.183.84.139/>

Tracks all active global conflicts with live news feeds, war statistics, and real-time country news channels. AI-assisted conflict classification with map-based visualisation.

Tech: [Angular](#) · [TypeScript](#) · [Mapbox](#) · [Chart.js](#) · [AI](#)

Lidar viewer — <https://lidar-pi.vercel.app/>

Built a high-performance 3D LiDAR point cloud visualization on interactive maps using WebGL and MapLibre. Enabled real-time rendering of large-scale geospatial datasets with level-of-detail optimization and smooth zoom/pan interactions.

Tech: [Angular](#) · [TypeScript](#) · [Mapbox](#) · [Chart.js](#) · [AI](#)

Daily Planner

Task management app with graph-database-powered relationship linking, bucket organisation, and smart scheduling.

Tech: [Angular](#) · [Node.js](#) · [Express.js](#) · [Neo4j](#)

EDUCATION

- ▶ **Master of Computer Applications (MCA)** | Dept. of Computer Science, University of Delhi (2016–2019)
- ▶ **Bachelor of Computer Applications (BCA)** | St. Aloysius College, Jabalpur — Rani Durgavati University (2013–2016)
- ▶ **AISSCE — Class XII** | Kendriya Vidyalaya 1 STC, Jabalpur (2013)
- ▶ **AISSE — Class X** | Kendriya Vidyalaya Southern Command, Pune (2011)

Open to roles in GIS · 3D Visualization · Full-Stack · Defence-Tech · Available for immediate discussion